

WHAT IS CLAIMED IS:

1. A lighting device for a vehicle, comprising:
a housing; and
first and second light sources provided in the housing,
wherein the second light source comprises a plasma lamp filled with gas containing charged particles.
2. The lighting device according to claim 1, wherein the lighting device is one of a head light assembly, a tail light assembly, a shifter knob, a shift indicator, and a control light for a vehicle.
3. The lighting device according to claim 1, wherein the plasma lamp comprises an enclosure, at least a first electrode positioned in the enclosure.
4. The lighting device according to claim 3, wherein the first light source comprises at least one of LED, incandescent, and halogen form.
5. The lighting device according to claim 3, wherein the plasma lamp includes a second electrode spaced from the first electrode, and the first electrode is positioned substantially centrally of the second electrode so that streamers from the plasma lamp bridge the spacing between the first electrode and the second electrode.
6. The lighting device according to claim 5, wherein the housing includes a light transmitting member through which the light from the first and second light sources transmits, the first light source providing a primary illumination and the second light source providing the streamers for different light effect.
7. The lighting device according to claim 6, wherein the plasma lamp has a central portion extending toward the light transmitting member and an outer portion surrounding the central portion, the first electrode is positioned in the central portion and the second electrode is

coaxially positioned at an end of the outer portion positioned farther away from the light transmitting member so that the streamers travel through the central portion toward the light transmitting member and arc back to the end of the outer portion surrounding the central portion.

8. The lighting device according to claim 7, wherein the second electrode is groundable and extends continuously or intermittently around the central portion.

9. The lighting device according to claim 7, wherein the plasma lamp includes a third electrode formed on or embedded in the central portion, and positioned substantially collinear with the first electrode, wherein the second and third electrodes are selectively groundable.

10. The lighting device according to claim 7, wherein the first light source comprises a plurality of LEDs positioned around the central portion.

11. The lighting device according to claim 7, further including a third light source comprising a plurality of LEDs positioned around the central portion.

12. The lighting device according to claim 7, further including a reflector spaced from the first light source and facing toward the light transmitting member, wherein the first light source is aimed toward the reflector so that the light from the first source is reflected toward the light transmitting member.

13. The lighting device according to claim 12, wherein the second electrode is groundable and extends continuously or intermittently around the central portion.

14. The lighting device according to claim 12, further including a third electrode formed on or embedded in the central portion, and positioned substantially collinear with the first electrode, wherein the second and third electrodes are selectively groundable.

15. The lighting device according to claim 12, further including a third light source

comprising a plurality of LEDs positioned around the central portion.

16. The lighting device according to claim 6, wherein at least part of the housing, including the light transmitting member forms the enclosure of the plasma lamp and the second electrode is composed of at least one of wires integrated into the light transmitting member or an electrically conductive coating on the light transmitting member so that the streamers travel from the first electrode to the light transmitting member.

17. The lighting device according to claim 16, further including a third electrode positioned closer to the light transmitting member, wherein the first and third electrodes are selectively chargeable to produce streamers having different effects.

18. The lighting device according to claim 17, wherein the first electrode comprises a plurality of electrodes positioned at different locations, the electrodes being independently chargeable to produce streamers having different effects.

19. The lighting device according to claim 16, wherein the first light source comprises a plurality of LEDs positioned around the first electrode.

20. The lighting device according to claim 16, further including a third light source comprising a plurality of LEDs positioned around the first electrode.

21. The lighting device according to claim 16, further including a reflector spaced from the first light source and facing toward the light transmitting member, wherein the first light source is aimed toward the reflector so that the light from the first source is reflected toward the light transmitting member.

22. The lighting device according to claim 21, further including a third electrode positioned closer to the light transmitting member.

23. The lighting device according to claim 22, wherein the first electrode comprises a plurality of electrodes positioned at different locations, the electrodes being independently chargeable to produce streamers having different effects.
24. The lighting device according to claim 21, wherein the first light source comprises a plurality of LEDs positioned around the first electrode.
25. The lighting device according to claim 21, further including a third light source comprising a plurality of LEDs positioned around the first electrode.
26. The lighting device according to claim 3, wherein the enclosure is located adjacent to the surface of a panel so that touching the enclosure changes electro-magnetic field characteristics of the plasma lamp to alter streamers in the plasma lamp.
27. The lighting device according to claim 26, wherein the lighting device is a shifter knob, and the enclosure is located adjacent to the surface of the knob so that touching the knob changes electro-magnetic field characteristics of the plasma lamp to alter streamers in the plasma lamp.
28. A lighting device for a vehicle, comprising:
a housing;
first and second light sources provided in the housing, wherein the second light source comprises a plasma lamp comprising an enclosure, a first electrode in the enclosure, a second electrode spaced from the electrode, and gas containing charged particles in the enclosure;
a sensor for detecting an operation status of the vehicle; and
a control unit for controlling the operation of the plasma lamp based on an output of the sensor.
29. The lighting device according to claim 28, wherein the control unit charges the first electrode and grounds the second electrode when the sensor detects a predetermined operating condition of a vehicle.

30. The lighting device according to claim 29, wherein the second electrode is formed outside the enclosure, formed on the enclosure, or embedded in the enclosure.

31. The lighting device according to claim 28, wherein the control unit charges the first electrode and grounds the second electrode when the sensor does not detect the predetermined operating condition.

32. The lighting device according to claim 31, further including a third electrode formed on the enclosure or embedded in the enclosure, and the control unit charges the first electrode and grounds the third electrode when the sensor detects the predetermined operating condition to generate more focused streamers, and grounds the second electrode when the sensor does not detect the operating condition to disperse the streamers.

33. The lighting device according to claim 32, wherein the predetermined operating condition is a brake engagement.

34. The lighting device according to claim 28, wherein the plasma lamp has a third electrode spaced from the first electrode, and formed inside the enclosure, the control unit charges the third electrode and grounds the second electrode when the sensor detects a predetermined operating condition of a vehicle to generate more focused streamers, and charges the first electrode when the sensor does not detect the operating condition to disperse the streamers.

35. The lighting device according to claim 34, wherein the predetermined operating condition is a brake engagement.

36. The lighting device according to claim 28, wherein the plasma lamp has additional electrodes disposed at different locations along the enclosure, and the control unit charges a selected sequence of additional electrodes and grounds the second electrode based on the sensor detecting a predetermined condition of a vehicle.

37. The lighting device according to claim 36, wherein the predetermined operating condition is a vehicle speed, and the control unit selectively controls the sequence of charging of the additional electrodes based on the vehicle speed.